TRANSLATION AND VALIDATION IN PASHTO (1): HOSPITAL ANXIETY AND DEPRESSION SCALE

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ABSTRACT

Objective: To translate and validate the hospital anxiety and depression scale (HADS) in Pashto.

Methodology: This study was conducted in Peshawar from July 2015 to January 2016 on 216 participants. The participants consisted of two groups; students (n=111) and patients (n=105). Mean age of the sample was 21.8 ±5.6 years. Majority were females [n=132 (61.1%)], unmarried [n=181, (83.2%)], and were educated to a level of intermediate or higher [n= 201, (93.1%)]. Three bilingual experts, using forward-backward method, translated HADS from English to Pashto. Both, English and Pashto version of HADS were given to the participants separately to find out concurrent validity of HADS (Pashto version). Pashto version of Bradford Somatic Inventory (BSI) was used to explore relationship of somatic symptoms with anxiety and depressive symptoms (measured through HADS).

Results: HADS Pashto version, well discriminated between both groups of participants. Patient group of participants had significantly higher scores of anxiety and depression as compared to students group (p value =0.000). The factorial validity of the Pashto version of HADS showed that it is a two-factor instrument. The Cronbach's alpha (α=0.7) of the Pashto version of HADS was sufficient. Regarding concurrent validity, the results showed a significant correlation between English and Pashto version of HADS (r =.716; p value=.000) while there was a positive correlation between anxiety and depressive symptoms (HADS; Pashto version) and somatic symptoms (BSI) (p value =.000).

Conclusion: Pashto version of HADS can be used in both community as well as clinical settings because of its reliability and validity in measuring anxiety and depression.

Key Words: Hospital Anxiety and Depression Scale, Translation, Validation, Pashto

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INTRODUCTION

Common mental disorders (CMDs) are a group of distress states expressed with anxiety, depressive and unexplained somatic symptoms[1]. CMDs have a high prevalence, affect people all across the globe and are ranked at the top of psychological disorders[2]. Evidence from western population gives a wide variation of prevalence ranging from 7-26% for CMDs[3,4]. A systematic review and meta-analysis, spread over a period of 33 years (1980-2013), found that almost one third of the respondents i.e., 29.2% (25.9-32.6%) have had an experience of a common mental disorder during their lifetime[5]. Worldwide, 480 million people are reported to be

suffering from depression with almost one-fourth having a dual diagnosis of anxiety disorders[6]. Globally the findings of epidemiological studies show that anxiety and depressive disorders are highly prevalent, common in all regions of the world and are a significant cause of functional impairment[7,12]. Depression could adversely affect general health status, quality of life and ability to work[13]; is associated with chronic illnesses and disabilities[14,15] and has high rates of co-morbid disorders, both psychiatric and physical. Therefore, it is important to assess anxiety and depression, even in non-psychiatric patients, in order to have an early diagnosis, to prevent the suffering of patients in medical practice.

Commonly used scales to assess anxiety and depression in Pakistan are Hospital Anxiety and Depression Scale (HADS)[16-19], Aga Khan University Anxiety and Depression Scale (AKUADS) [20-23], Beck Depression and Anxiety Inventories and Zung Self-Rating Anxiety and Depression scales[24-26]. HADS is a 14 items, self-reporting questionnaire to find levels of anxiety and depression in patients[27,28]. It has two sub-scales of seven items each for anxiety and depression. Each item is rated on a 4 point Likert scale (ranges 0-3). On either sub-scale, a score of 11 or more is considered "psychological morbidity"; 8-10 represents "borderline" and scores of 0-7 is considered "normal". The scale can be completed in 5-10 minutes[29].

HADS has been translated and validated in various languages and has proven to have clinically meaningful results as a psychological screening tool[29]. A study conducted by Spinhoven et al[30] on validation of HADS in Dutch population found homogeneity of the reliabilities of sub-scales. They also found test-retest reliability of the total scale and the sub-scales i.e., anxiety and depression, which was good i.e., (.71 to .90). The dimensional structure and reliability of the HADS was stable across all settings and age groups. In a study conducted by Mumford et al[31] on translation and evaluation of an Urdu version of HADS suggested that Urdu version was a reliable and valid translation of the HADS for use in Pakistani population.

In the region of Khyber Pakhtunkhwa, no such work has been done on HADS Pashto, so far, to the best of our knowledge. Thus, it is important to validate the questionnaire in Pashto, the most commonly spoken language of this region, so that it can be used as a valuable measure for helping clinicians in diagnosing anxiety and depression in Pashto speaking patients in Khyber Pakhtunkhwa and Afghanistan.

METHODOLOGY

This study was conducted simultaneously in the psychiatry outpatient departments of teaching hospitals of Peshawar and Peshawar Medical College from July 2015 to January 2016, after having ethical approval from the Institutional Review Board of Prime Foundation. For the study, we used purposive sampling technique and included 216 participants with (patients from the psychiatry outpatients departments, n=105) and without (students of Peshawar Medical College, n=111) symptoms of anxiety and depression. Participants were told about the objectives of the research and were assured of the confidentiality of the responses.

Three bilingual experts, using forward-backward method, translated HADS from English to Pashto. No feedback from the sample was received to make any change in the translation of the scale. Both, English and Pashto versions of HADS were given to the participants separately. First, they were given English version of HADS and then the Pashto version was administered with a time gap in which they were asked to fill another questionnaire. This cross over design was done to avoid any practice effects. They were also given Pashto version of Bradford Somatic Inventory, for correlation with Pashto version of HADS.

The analysis of the basic demographic variables was carried out using descriptive statistics. Further data analysis was performed by using SPSS version 20. Discriminant validity of HADS (Pashto & English version) and its sub-scales between both groups of participants was assessed using t-test. Exploratory factor analysis (factor loadings of the Pashto version of HADS in the factor solution obtained through Varimax rotation) was used to find the factorial validity. Cronbach's alpha reliability was used to measure the internal consistency of the questionnaire and value of alpha was considered satisfactory if it was equal to or greater than 0.7. To find the construct validity of HADS Pashto version, item total correlation and Cronbach's alpha, if item deleted, were also computed. The concurrent validity of HADS was assessed through finding correlation between the total score of English and Pashto versions of HADS. Pearson correlation was used to explore relationship between anxiety and depressive symptoms (measured by HADS Pashto version) and somatic symptoms (measured by BSI).

RESULTS

The mean age of the sample was 21.8 ±5.6 years. Majority of the participants were female [n=76 (35.5%) in student group and 56 (25.9%) in patient group]. Most of the participants were unmarried (83.2%) and majority were educated to a level of intermediate or higher (n= 201, 93.1%) with only 11 (5.1%) participants being illiterate.

The results using chi-square test on HADS sub-scales on both group of participants, shows that participants from patients group had significantly higher level of

anxiety and depression as compared to students (p value =.000, Table 1).

Results of discriminant validity showed that the HADS well discriminated between both groups of participants indicating that patient group of participants had significantly higher scores of anxiety and depression as compared to that of students group (p value =.000 on total and sub-scales). The detailed results are given in table 2.

According to the factorial validity of the scale, two factors explained 30.23% of the total variance and showed high correlation with the corresponding subscales [(r =0.89 for factor 1 (anxiety) and r =0.46 for factor 2 (depression)] as shown in table 3.

Results revealed that HADS Pashto version has sufficient (α=0.7) internal consistency reliability. Table 4 shows item total score correlation and Cronbach's alpha, if item deleted. HADS Pashto version also demonstrated high concurrent validity (r =.716; p value =0.000) when the scores of HADS Pashto version were correlated with those of HADS English version.

Results also revealed significant correlation (r =.356; p value =0.000) between anxiety and depressive symptoms and somatic symptoms while both sub-scales of HADS Pashto version had significant inter-scales correlation (p<0.01, Table 5).

DISCUSSION

The present study translated and validated one of the most widely used instruments i.e., HADS which measures anxiety and depression. The psychometric properties of the Pashto version of the HADS are similar with those of other languages[32-34].

Table 1: Comparison of sub-scale of HADS on both English and Pashto version using chi-square test (n=216)

S. No.	Scale	Sub-scales	N	Students	Patients	P value
1	HADS (English)	Anxiety	Normal (96)	71 (32.9%)	25 (11.6%)	.000
			Borderline (49)	20 (9.3%)	29 (13.4%)	
			Psychological Cases (71)	20 (9.3%)	51 (23.6%)	
		Depression	Normal (114)	84 (38.9%)	30 (13.9%)	.000
			Borderline (57)	18 (8.3%)	39 (18.1%)	
			Psychological Cases (45)	9 (4.2%)	36 (16.7%)	
2	HADS (Pashto)	Anxiety	Normal (97)	72 (33.3%)	25 (11.6%)	.000
			Borderline (54)	25 (11.6%)	29 (13.4%)	
			Psychological Cases (65)	14 (6.5%)	51 (23.6%)	
		Depression	Normal (76)	57 (26.4%)	19 (8.8%)	.000
			Borderline (74)	29 (13.4%)	45 (20.8%)	
			Psychological Cases (66)	25 (11.6%)	41 (19.0%)	

Table 2: Discriminant validity of HADS and its sub-scales between two groups (n=216)

Scales	Groups				t-value	Sig
	Students (n=111)		Patients (n=105)			
	Mean	SD	Mean	SD		
English HADS Total	11.74	7.11	19.14	6.25	-8.113***	.000
English HADS Anxiety	6.38	4.19	9.91	3.81	-6.469***	.000
English HADS Depression	5.39	4.19	9.23	3.53	-7.847***	.000
Pashto HADS Total	14.34	5.84	20.04	4.86	-7.764***	.000
Pashto HADS Anxiety	6.59	3.32	10.10	3.56	-7.517***	.000
Pashto HADS Depression	7.75	3.31	9.93	2.70	-5.295***	.000

*** = p <0.01 level; ** = p <0.05 level.

Table 3: Factor Loadings of the Pashto version of HADS in the factor solution obtained through Varimax rotation (n=216)

S. No.	Statements	Anxiety Factor 1	Depression Factor 2
1.	Item 1 (Anxiety)	**.764**	.168
2.	Item 2 (Depression)	.032	**.616**
3.	Item 3 (Anxiety)	**.722**	.106
4.	Item 4 (Depression)	.021	**.730**
5.	Item 5 (Anxiety)	**.739**	.229
6.	Item 6 (Depression)	.145	**.675**
7.	Item 7 (Anxiety)	.192	**.737**
8.	Item 8 (Depression)	**.693**	.090
9.	Item 9 (Anxiety)	**.641**	.094
10.	Item 10 (Depression)	**.677**	.041
11.	Item 11 (Anxiety)	**.785**	.044
	Item 12 (Depression)	.006	**.730**
	Item 13 (Anxiety)	**.731**	.002
	Item 14 (Depression)	.145	**.601**
Eigen Values		4.30	2.92
Percentage of Variance		30.23	
Kaiser-Myer-Olkin Measure of Sampling Adequacy		.851	
Bartlett's Test of Sphericity, Approximate Chi-Square		1077.66***	

Bold: greater values of factor loadings in every item (>0.4).

*** p <.001

Table 4: Item total score correlation and Cronbach's alpha, if item deleted, for the Pashto translation of HADS (n=216)

S. No.	Item No.	Correlation with Total Score	Cronbach's Alpha if deleted
1	1	.59***	.61
2	2	.26***	.66
3	3	.53***	.63
4	4	.28***	.66
5	5	.60***	.61
6	6	-.44***	.74
7	7	.42***	.64
8	8	.51***	.63
9	9	-.51***	.77
10	10	.47***	.63
11	11	.51***	.63
12	12	.29***	.66
13	13	.48***	.63
14	14	.37***	.65

*** = p <0.01 level; ** = p <0.05 level.

Table 5: Correlation of Pashto version of HADS with Pashto version of BSI (n=216)

S. No.	Scales	I	II	III	IV
I	Overall HADS	1			
II	Anxiety Symptoms	.886*** (.000)	1		
III	Depressive Symptoms	.831*** (.000)	.478*** (.000)	1	
IV	BSI	.356*** (.000)	.427*** (.000)	.163** (.016)	1

*** = p <0.01 level; ** = p <0.05 level.

The results of present study showed that HADS Pashto version have high discriminant validity, as there was significant difference between the mean scores of Patient population and student (normal) population. Results revealed that mean scores of patient population were significantly high on both anxiety and depressive symptoms (p <0.01) as compared to the student population. Therefore, Pashto version of HADS is valid enough to discriminate between clinical and normal populations.

The two-factor model of the original English version was confirmed by our results of factorial validity that showed high correlation between corresponding subscales[28]. Item 7 of HADS, showed the same pattern of factor loading on depression factor which was reported by many researchers in English, German and Chinese validation studies[29]. The validity of HADS for detecting emotional distress is further reinforced by the findings of a recent study conducted on patients with breast cancer. However, its findings suggest being cautious while using the sub-scales as 'case identifiers' or a measure of outcome[35]. Although several studies suggest that HADS is a two-factor instrument, many argue that inter-correlations between the sub-scales mainly result from coincidence of symptoms of anxiety and depression and the inadequacy of the instrument has a very minor role to play[29,33].

The Cronbach's alpha reliabilities for HADS Pashto version was slightly less than the reliability calculated in the Greek study, which showed it to be 0.884[37]. Studies have also calculated the Cronbach's alpha for anxiety (0.829, 0.82 & 0.78) and depression (0.840, 0.83 & 0.86)[37-39]. Comparison of construct validity of the Pashto version of HADS showed similar findings to the study by Michopoulos et al[37]. The results of concurrent validity of English and Pashto versions of HADS showed highly significant positive correlation. However, the concurrent validity has been measured in other studies, using comparison of HADS with scales measuring anxiety and depression and the results have been significant[36-38].

The results of Pearson correlation of Pashto version of HADS with BSI showed that anxiety and depression scores of HADS had a significant correlation with somatic symptoms, as expected, which suggest that somatic complaints are frequently found in patients with anxiety and depression.

LIMITATIONS

In the present study, we were unable to employ CFA as the patients sample was not enough to be used in CFA. Also, the comparison group consisted of students who might have filled the questionnaire with a casual or less interested attitude. In case, we combine patients as well as students to get a total sample, the emerging model is not expected to give an appropriate fit and may show factor loadings that do not meet the suggested minimum criteria. It is suggested that future researchers may recruit enough clinical sample to employ CFA.

CONCLUSION

Pashto version of HADS is a reliable and valid tool to find out anxiety and depression and can be used in both hospital and community settings, helping physicians to recognize anxiety or depressive symptoms in patients who need special psychiatric care.

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CONTRIBUTORS

MI conceived the idea, planned the study, and drafted the manuscript. MRS, IK, NRA and US helped acqui¬sition of data and did statistical analysis. FN helped in drafting the manuscript. FN critically revised the manuscript and supervised the study. All authors contributed significantly to the submitted manuscript.